

throat and dorsal fin of a finner, combined with the short body and large head of a true whale (Balænidæ). The ear-bone is somewhat intermediate in form between the two groups, and fully justifies my opinion that when the entire animal and skeleton are known it may prove to be the type of a new family of whales (Suppl. Cat. Seals & Whales, p. 41).

I will describe the skeleton as soon as it arrives; for there is no doubt, from the proportion and size of the head and body, it is a new form of whale, if it is not *Neobalæna*.

XLIV.—*A Revision of the Genera Epicharis, Centris, Eulema, and Euglossa, belonging to the Family Apidæ, Section Scolipedes.* By FREDERICK SMITH, Assistant in the Zoological Department of the British Museum.

*Generic Characters of Epicharis, Klug.*

*Head* not so wide as the thorax: eyes elongate-ovate; ocelli three, placed in a slight curve on the vertex: antennæ geniculate; the flagellum filiform, the first joint narrowed to its base: the labial palpi four-jointed, the two basal joints elongate, the first one third longer than the second, both flattened and membranaceous within; the third and fourth minute, attached near the apex of the second joint: the maxillary palpi two-jointed; the basal joint large, barrel-shaped, with its apex truncate, the second joint pear-shaped and minute: mandibles stout, with three blunt teeth at their apex. *Thorax*: the anterior and intermediate tibiæ with a single spine at their apex; the posterior tibiæ with two spines, the inner one pectinated: the anterior wings with one marginal cell, pointed at the base and rounded at its apex, having three submarginal cells, the first and second of nearly equal length, the second *narrowed towards the marginal cell*, receiving the first recurrent nervure a little beyond the middle; the third submarginal cell about two thirds of the length of the second submarginal, and receiving the second recurrent nervure near its apex.

The characters are drawn from *Epicharis rustica*.

An asterisk is prefixed to the descriptions of such new species as are in the collection of the British Museum.

1. *Epicharis rustica*.

*Epicharis rustica*, Latr. Encyc. Méth. x. (1825) p. 530; St.-Farg. Hym.

ii. p. 170, ♀ ♂.

*Apis rustica*, Oliv. Encyc. Méth. iii. p. 8, ♀ (1792).

*A. hirtipes*, Fab. Ent. Syst. ii. p. 325 (1793).

*Epicharis dasypus*, Klug, Illig. Mag. vi.; Blanch. Hist. Nat. des Ins. iii. p. 405; Schomb. Faun. Flor. Brit. Guiana, p. 591.

*Hab.* Cayenne; Para; Catagallo; Venezuela.

2. *Epicharis Dejeanii*.*Epicharis Dejeanii*, St.-Farg. Hym. ii. p. 171, ♀.*E. fasciata*, St.-Farg. *ibid.* p. 172, ♂ (and type in coll. Westw.).*Hab.* Amazons ; Cayenne.3. *Epicharis fasciata*.*Epicharis fasciata*, St.-Farg. Hym. ii. p. 172, ♀ (nec ♂).*Hab.* Rio Janeiro.4. *Epicharis analis*.*Epicharis analis*, St.-Farg. Hym. ii. p. 173, ♀.*Hab.* ———?5. *Epicharis umbraculata*.*Epicharis umbraculata*, Klug, Illig. Mag. vi. p. 226.*Centris umbraculata*, Fab. Syst. Piez. p. 355, ♀.*Epicharis cajennæ*, St.-Farg. Hym. ii. p. 172, ♀ var. Type in coll. Westw.

*Male*: differs in having the basal joint of the antennæ white in front, a minute transverse spot above the clypeus, a line on each side of the clypeus, the labrum, and a spot at the base of the mandibles white; the posterior tibiæ are also yellowish white: in other respects the male resembles the female.

The *E. cajennæ* is certainly a variety of this species; I have compared the type specimens with others, which have the abdomen black and yellow. I have also seen intermediate examples.

*Hab.* Cayenne; Santarem.6. *Epicharis bicolor*.*Epicharis bicolor*, Smith, Cat. Hym. Ins. *Apidæ*, ii. p. 368, ♂.*Hab.* Brazil.7. *Epicharis zonata*.*Epicharis zonata*, Smith, Cat. Hym. Ins. *Apidæ*, ii. p. 369, ♂.*Hab.* Brazil.8. *Epicharis elegans*.*Epicharis elegans*, Smith, Journ. Entom. i. p. 152.*Hab.* Mexico.

The female has the head, thorax, and legs black, the posterior tibiæ and basal joint of the tarsi with a dense brush of fulvous pubescence; the thorax is clothed with black pubescence. The male has the thorax covered with griseous pubescence, tinged with yellow above, and the clypeus, scape of the antennæ in front, base of the mandibles, base of the tibiæ, and apex of the posterior femora yellow; wings subhyaline.

\*9. *Epicharis maculata*.

*Female*. Length 7 lines. Black; the labrum, a spot at the anterior lateral angles of the clypeus, a line at the inner orbits of the eyes terminating opposite the insertion of the antennæ, and a minute spot at the base of the mandibles yellow; the labrum with a narrow rufous margin, and fringed with hairs of the same colour. Thorax: a minute spot on each side of the collar, two on the tegulæ, one at the extreme base of the wing, and two on the scutellum yellow; a yellow spot at the base of the posterior tibiæ above; the posterior tibiæ and tarsi ferruginous, and densely clothed with fulvous pubescence; wings subhyaline, faintly clouded at their apex, the nervures fusco-ferruginous. Abdomen: the basal segment rufo-fuscous, the three following yellow; the second and third segments have on their apical margins a broad black fascia, which is widest in the middle, narrowing abruptly towards the lateral margins, to which they do not extend; the apical segments more or less ferruginous.

*Hab.* Mexico (Oajaca).

\*10. *Epicharis scutellata*.

*Female*. Length 9 lines. Black; head shining, the clypeus prominent, a transverse minute pale yellow spot on each side of its anterior margin, a similar spot above it; a line at the inner margin of the eyes, not extending above the insertion of the antennæ, and the sides of the labrum yellow; the tips of the mandibles testaceous. Thorax clothed with short cinereous pubescence; the legs rufo-piceous beneath; a minute white spot at the base of the anterior and intermediate tibiæ outside; the posterior tibiæ and basal joint of the tarsi densely clothed with fulvous pubescence; the scutellum naked, flattened, deeply notched behind, and forming two horse-shoe shapes; wings dark fuscous. Abdomen slightly shining, and having an interrupted yellow fascia at its basal margin; the three following segments with an oblong oblique yellow macula, pointed at its apex within, the first much larger than either of the following, the third sometimes obsolete; the fourth and fifth segments with their apical margins more or less testaceous; the sixth, as well as the apical margins of the segments beneath, rufo-testaceous and fringed with pale fulvous pubescence.

*Hab.* Brazil (Tunantins, Amazon).

\*11. *Epicharis affinis*.

*Female*. Length 9 lines. Black; head slightly shining; the clypeus and labrum strongly punctured. The insect

otherwise closely resembling *E. scutellata*, from which it differs in having the scutellum rounded behind; the legs dark rufopiceous; the tibiæ have no spots at their apex; the abdomen is black-brown, and the basal segment of the abdomen is immaculate, the apical segment has no pale pubescence, and the fringe on the segments beneath is dark brown.

*Hab.* Brazil (Tunantins, Amazon); Bahia.

A specimen from Bahia has the lateral maculæ on the second segment larger, and has a narrow fascia at the basal margin of the third segment.

\*12. *Epicharis conica*.

*Female.* Length 9–10½ lines. Head and thorax black, the abdomen ferruginous, the flagellum of the antennæ obscurely ferruginous beneath. Thorax shining and impunctate, the sides and the metathorax posteriorly clothed with sooty-black pubescence; all the femora ferruginous beneath; the posterior tibiæ and the first joint of the tarsi ferruginous, and clothed exteriorly with dense pale fulvous pubescence; wings fuscohyaline. Abdomen conical, ferruginous, the posterior margins of the segments usually more or less fuscous; palest beneath, and with the apical margins of the segments fringed with bright fulvous pubescence.

*Male.* A little smaller than the female; the labrum, and scape of the antennæ white in front; the first joint of the intermediate tarsi above, the posterior tibiæ, and first joint of the tarsi fringed above with fulvous pubescence; the posterior tibiæ in front pale ferruginous; the tarsi bright yellow in front, and the first joint terminating at its apex in a sharp spine; the claw-joint elongate. Otherwise like the female.

*Hab.* Brazil (Villa Nova, Para).

\*13. *Epicharis albofasciata*.

*Male.* Length 5¾ lines. Black; the labrum, an interrupted transverse line on the clypeus at its apical margin, its sides, and a line on the mandibles yellow; the scape of the antennæ in front white, the flagellum fulvous beneath. Thorax: an abbreviated line on each side of the collar, a spot on the tegulæ (which are testaceous) in front, another behind, and the posterior half of the scutellum yellow; wings subhyaline; legs ferruginous, and more or less fuscous above; the posterior tibiæ and first joint of the tarsi fringed above with sooty-black pubescence; the claws of the tarsi black. Abdomen black above and rufo-testaceous beneath; above, the second segment with a narrow white fascia near its basal margin, the fourth

segment with a narrow yellow fascia at its basal margin, usually more or less interrupted in the middle; the fifth segment has a similar fascia; the apical segments are reddish yellow; the fascia on the fourth segment is frequently obsolete.

*Hab.* Brazil (St. Paulo, Para).

[To be continued.]

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#### BIBLIOGRAPHICAL NOTICE.

*Synopsis of the Acrididæ of North America.* By CYRUS THOMAS, Ph.D. *Being Part I. of the Fifth Volume of the 'Report of the United-States Geological Survey of the Territories,' issued by the Department of the Interior.* 4to: Washington, 1873.

THERE is one particular in which the Government of the United States puts those of European countries to utter shame. This is the liberality shown in America in the promotion of scientific research, both by the central Government and by the Legislatures of the various States. All over the States geological surveyors are hard at work; and the results of their labours are given to the world in a constantly increasing series of valuable volumes, which are most liberally circulated gratuitously in other countries. With a breadth of view which deserves all praise, the geological surveyors do not confine themselves to mapping the geological formations of various districts, and describing the fossils obtained from them, but they devote a good deal of attention to the recent productions of the regions traversed by them; and the results of their investigations are published from time to time at the public cost, and as an integral part of the work properly belonging to the surveys.

Dr. Thomas's "Synopsis of the Acrididæ of North America" is one of these publications, and it forms the first part of a volume which is to be devoted exclusively to the recent zoology and botany of the United States. After giving a list of works on the Orthoptera referred to in his monograph, the author describes, in considerable detail, the external and internal structure of the insects belonging to the family the American species of which form its subject-matter. This introduction, which is illustrated with two outline wood-engravings, furnishes a guide to the terminology of the parts in these insects.

With regard to the oviposition of the Acrididæ, Dr. Thomas states that the destructive migratory species of the West (*Caloptenus spretus*), like the migratory locusts of Europe, deposits its eggs, to the number of 50 or 100, in a cocoon-like mass, covered with a tough glutinous secretion, but that this method is by no means followed by all other American species. Even the red-legged locust (*Caloptenus femur-rubrum*) was found by him to lay its eggs loosely in rotten wood.